

REMARKS/ARGUMENTS

Claims 1-3 and 5-30 were previously pending in the application. Claim 29 is amended; and new claims 31-32 are added herein. Assuming the entry of this amendment, claims 1-3 and 5-32 are now pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Missing IDS:

An information disclosure statement based on a corresponding European search report citing four (4) references was filed with the USPTO on 11/02/2004. In the next office action, we request the enclosure of Form PTO-1449 with the Examiner's initials as acknowledgment of these references. For your convenience, we are enclosing copies of the PTO-1449 form filed on 11/02/2004 and the return postcard, which was stamped as received by the OIPE on 11/04/2004.

Claim Rejections:

In paragraph 3, the Examiner rejected claims 1-3 and 5-30 under 35 U.S.C. § 103(a) as being unpatentable over Murray in view of Patel. For the following reasons, the Applicant submits that all pending claims are allowable over Murray and Patel.

Claims 1-3 and 5-30:

Claim 1 is directed to a device having a splitter adapted to receive an input signal corresponding to a duobinary sequence and generate a first copy and a second copy of the input signal. The device also has first and second comparators and a logic gate. The first and second comparators are adapted to receive the first and second copies, respectively, and generate first and second binary signals, and the logic gate is adapted to generate a third binary signal based on the first and second binary signals, wherein the third binary signal is a binary representation of the duobinary sequence.

Murray discloses a circuit designed to convert a duobinary signal into a binary signal (see, e.g., Fig. 1 and page 1, lines 3-5). On page 3 of the office action, the Examiner admitted that Murray does not teach "a splitter that splits the duobinary signal into a first copy and a second copy before being inputted into the comparators." However, the Examiner stated that "Patel et al. disclose in Figure 1, a duo-binary to binary encoder circuit that comprises a data splitter (15) that splits the duo-binary signal before its conversion to binary (see col. 5, lines 42-53)."

Patel discloses an apparatus for transmitting an 8-bit binary format data word as a 6-trit ternary (a variant of duobinary modulation) code word (see, e.g., the abstract and Figs. 1-3). Therefore, the apparatus of Patel is a binary-to-duobinary encoder circuit and not "a duobinary to binary encoder circuit" as stated by the Examiner in the above-cited portion of the rejection. As such, it is submitted that the Examiner mischaracterized the teachings of Patel and used them improperly to reject the claims.

In addition, the Applicant submits that it would not have been obvious to one of ordinary skill in the art to combine the circuits of Murray and Patel because these circuits have opposite functionality. More specifically, the circuit of Murray acts as a duobinary-to-binary converter while the circuit of Patel acts as a binary-to-duobinary converter. As such, the circuit of Patel would substantially reverse the conversion performed by the circuit of Murray, and vice versa. Thus, incorporation of the circuit of Patel into the circuit of Murray, or vice versa, would destroy the circuit's functionality. For this reason, the Applicant submits that the Examiner improperly combined the teachings of Murray and Patel.

Even if the combination of Murray and Patel were proper, which the Applicant does not admit, it is submitted that Murray and Patel, independently or in combination, do not teach or even suggest a splitter adapted to generate first and second copies of an input signal, wherein the input signal corresponds to a duobinary sequence as explicitly recited in claim 1.

As already indicated above, the Examiner admitted that Murray does not teach a splitter. For the reasons indicated below, the Applicant submits that the Examiner's reliance on Patel's data splitter 15 and its description in col. 5, lines 42-53, is improper. More specifically, Patel's col. 5, lines 42-53, read as follows:

The 4-bit nibbles from MAC 10 are received by an 8-bit register 11. Register 11 receives two nibbles and then makes the resulting 8-bit data word available to 8B6T encoder 13. The encoder encodes the 8-bit data word and outputs a 12-bit binary coded ternary (BCT) code word, which represents a 6-trit ternary code word, to data splitter 15. Operation of data splitter 15 is controlled by state machine 14 which is connected to the MAC's clock and which provides a simple sequential 3-bit select signal to data splitter 15 and encoder 13. *The data splitter time de-multiplexes the 12-bit code words among three shift registers 16, 17, and 18 in a round robin fashion in response to the 3-bit select signal from state machine 14.* [Emphasis added.]

It is therefore apparent that Patel's data splitter 15 is a time-based data de-multiplexer adapted to route different bits of the input code words to different outputs. Thus, each of the output signals generated by data splitter 15 carries a different subset of the data carried by the input signal and, as such, is not a copy of that signal. In contrast, the splitter recited in claim 1 is "adapted to receive an input signal and generate a first copy and a second copy of the input signal."

For all these reasons, the Applicant submits that claim 1 is allowable over Murray and Patel. For similar reasons, the Applicant submits that claims 14, 18, and 21 are also allowable over Murray and Patel. Since claims 2-3, 5-13, 15-17, 19-20, and 22-30 depend variously from claims 1, 14, 18, and 21, it is further submitted that those claims are also allowable over Murray and Patel.


Claims 31-32:

New claim 31 is directed to a method of signal processing. The method includes the steps of: (A) splitting an input signal representing a duobinary sequence into first and second copies using a splitter; (B) comparing (i) magnitude of the first copy with a first threshold voltage to generate a first binary value and (ii) magnitude of the second copy with a second threshold voltage to generate a second binary value; and (C) applying a logic function to the first and second binary values to generate an output signal having a binary representation of the duobinary sequence. For step (B), the comparison is performed asynchronously without recovering a clock signal corresponding to the input signal and each of the first and second threshold voltages is not based on peak detection in the input signal. New claim 32 has analogous limitations. The Applicant submits that none of the cited references teaches a combination of features corresponding to that of claim. It is therefore submitted that claims 31 and 32 are allowable over the cited references.

In view of the above amendments and remarks, the Applicant believes that the now pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

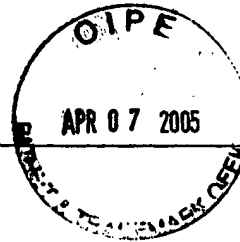
Respectfully submitted,

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In re Application of: Andrew Adamiecki and Jeffrey H. Sinsky
Attorney Docket No.: Adamiecki 2-6
Serial No.: 10/630,422 Filed: 07/30/2003
Title: **"Duobinary-to-Binary Signal Converter"**



To: Mail Stop **Amendment**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Kindly affix hereon the official stamp of the U.S. Patent and Trademark Office acknowledging receipt of the following:

1. Information Disclosure Statement w/PTO-1449 (3 pages) and 4 References; and
2. Copy of European Search Report from Corresponding European application (3 pages).

YAG:al

Date: 11/02/04

Sincerely,

Yuri Gruzdkov
Reg. No. 50,762

990.0499

In re Application of: Andrew L. Adamiecki and Jeffrey H. Sinsky
Attorney Docket No.: Adamiecki 2-6
Serial No.: 10/630,422 Filed: 07/30/2003
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2. Copy of European Search Report from Corresponding European application (3 pages).

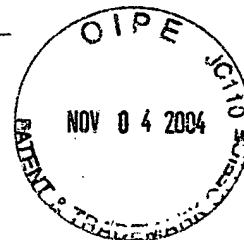
YAG:al

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

Re: Attorney Docket No. Adamiecki 2-6

In re application of: Andrew L. Adamiecki and Jeffrey H. Sinsky

Serial No.: 10/360,422

Group No.: 2819

Filed: 07/30/2003

Examiner: Jean Pierre, Peguy

Matter No.: 990.0499

For: Duobinary-to-Binary Signal Converter

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR § 1.56, this is an Information Disclosure Statement (IDS) for the above-captioned U.S. patent application. An IDS Form PTO-1449 listing references is enclosed herewith and forms a part hereof. Submission of references is not an admission that those references are in fact prior art.

Certification Under 37 CFR § 1.704(d)

- [X] Each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of this statement.

Certification Under 37 CFR § 1.97(e)

- [X] Each item of information contained in this statement was either (1) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement or (2) not known to any individual designated in § 1.56(c) more than three months prior to the filing of this statement.

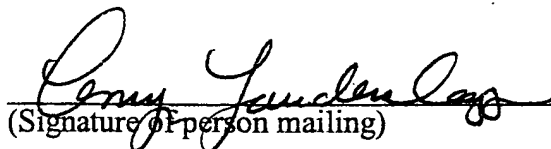
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Certification Under 37 CFR 1.8

Date of Deposit 11/02/2004

I hereby certify that this paper and any accompanying papers or fees are being deposited with the U.S. Postal Service with sufficient postage as first class mail under 37 CFR 1.8 on the date indicated above and addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Amy Laudenslager
(Name of person mailing)


(Signature of person mailing)

Fee Under 37 CFR § 1.97(c)

☐ The fee for submission of this IDS under § 1.97(c) is \$180.00 as set forth in § 1.17(p).

Petition Under 37 CFR § 1.97(d)

☐ This is a petition requesting consideration of an IDS under § 1.97(d). The petition fee for submission of this IDS under § 1.97(d) is \$180.00 as set forth in § 1.17(p).

Provision of Copies of References

☒ A copy of each of the listed references is enclosed herewith and forms a part hereof.

☐ A translation of each of Reference(s) ___ is enclosed herewith and forms a part hereof.

☐ A copy of the International Search Report from a corresponding PCT application is enclosed herewith.

☒ A copy of the European Search Report from a corresponding EPO application is enclosed herewith.

☐ A copy of the final U.S. office action for U.S. patent application no. _____ filed on _____ as attorney docket no. (Case name or our ref.).

☐ The above-captioned U.S. patent application is a

- ☐ continuation
- ☐ divisional
- ☐ continuation-in-part

application of U.S. application serial number ____, filed on ____ as Attorney Docket No. ____.
Each of the listed references was previously cited by or submitted to the Office in the prior application. The above-captioned U.S. patent application relies upon the prior application for an earlier filing date under 35 U.S.C. 120. Pursuant to § 1.98(d), copies of the listed references are not being provided with this IDS.

Authorization To Charge Deposit Account

☒ Authorization is given to charge the deposit account of **Mendelsohn & Associates, P.C. Deposit Account No. 50-0782** for any fee under § 1.97(c) or § 1.97(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449 form as confirmation that each of the documents has been considered.

Respectfully submitted,



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Enclosures

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE
(Rev. 2-32) PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.

SERIAL NO.

Adamiecki 2-6
APPLICANT

10/360,422

Andrew L. Adamiecki and Jeffrey H. Sinsky
FILING DATE GROUP

07/30/2003

2819

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
BA	EP 0 369 159 A	05/1990	Europe			Abstract
BB	GB 2 217 957	11/1989	United Kingdom			English
BC	EP 0 551 858 A2	07/1993	Europe			English

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

BD	"Extended 10 Gb/s Fiber Transmission Distance at 1538 nm Using a Duobinary Receiver," by G. May et al., IEEE Photonics Technology Letters, IEEE Inc. New York, US, vol. 6, no. 5, 1 May 1994, pgs. 648-650.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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IP DEPT.
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Zeichen/Ref./Réf. A.L.ADAMIECKI 2-6	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 04254284.5-2223-
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire LUCENT TECHNOLOGIES INC.	

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☐ abstract

☐ title

☒ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract

3

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	MAY G ET AL: "EXTENDED 10 GB/S FIBER TRANSMISSION DISTANCE AT 1538 NM USING A DUOBINARY RECEIVER" IEEE PHOTONICS TECHNOLOGY LETTERS, IEEE INC. NEW YORK, US, vol. 6, no. 5, 1 May 1994 (1994-05-01), pages 648-650, XP000446985 ISSN: 1041-1135 * figure 1 * * page 648, right-hand column, line 33 - line 42 *	1-3,7,10	H03M5/18
X	EP 0 369 159 A (ANT NACHRICHTENTECH) 23 May 1990 (1990-05-23) * abstract * * figure 2 *	1,4-10	
X	GB 2 217 957 A (PHILIPS ELECTRONIC ASSOCIATED) 1 November 1989 (1989-11-01) * abstract; figures 1,3-5 *	1,7,10	
X	EP 0 551 858 A (SAMSUNG ELECTRONICS CO LTD) 21 July 1993 (1993-07-21) * figure 1 * * column 1, line 19 - line 38 *	1,7,10	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H03M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 September 2004	Examiner Winkler, G
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 25 4284

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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13-09-2004

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0369159	A	23-05-1990	DE	3838685 A1	17-05-1990
			EP	0369159 A2	23-05-1990
GB 2217957	A	01-11-1989	EP	0339727 A2	02-11-1989
			JP	1314019 A	19-12-1989
EP 0551858	A	21-07-1993	DE	69328505 D1	08-06-2000
			EP	0551858 A2	21-07-1993